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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,687	03/11/2004	Dale M. Pitt	7784-000999	6261

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HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER	
HOLZEN, STEPHEN A	
ART UNIT	**PAPER NUMBER**
3644	
MAIL DATE	**DELIVERY MODE**
05/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/798,687	PITT, DALE M.	
	Examiner	Art Unit	
	Stephen A. Holzen	3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *24-27 and 34-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *24-27, 34-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 3/28/2007 have been fully considered but they are not persuasive.

Re – Claim 24: Applicant has argued that Wykes does not teach that computers (50 and 70) are installed on the aircraft. The examiner disagrees with this argument. The computers inherently must be installed on the aircraft because otherwise they would not be capable of efficiently monitoring and controlling vibrations.

Re – Claim 24: Further applicant argues that computers (50, 70) are not "mounted to the control actuators". The examiner does not see this limitation in the claims. Instead the applicant has claimed a "vibration canceling circuit to the actuator". Since the claims and applicant's arguments are of a different scope applicant's arguments are moot. Wykes anticipates a "mounting a vibration canceling circuit to the actuator" because inherently actuators have circuits that command them how to behave.

Re – Claims 27, 35 and 39: Applicant has argued that Wykes does not filter a vibration signal from a position signal however applicant provide no rational by which to support this assertion. Therefore the examiner cannot agree with applicant's assertion.

Re – Claim 34: Applicant has argued that it is apparent that computers (50, 70) do not receive signals from the actuators. The examiner disagrees and asserts that Figure 3 illustrates that both the controls and the sensors send and received signals to the computer.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 24, 25 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Wykes et al (4,562,546).

Wykes discloses a method of damping vibrations of a an aircraft wing including a control system (50), a movable structure (18-21) operatively connected to the wing, and an actuator (52) operatively coupled to the structure to move the structure in response to a command signal from the control system (inherent that actuators are "commanded" to move via a command signal), the method comprising: mounting a vibration canceling circuit to the actuator (see sum junction in Figure 3) generating a signal representative of vibration of the member (sensors #30, 32, 34, 36 generate signals that represent the vibration of the movable structures), the generating performed using a vibration sensor operatively connected with the member (the vibrations are connected with the wing) ; combining the vibration signal with the command signal to generate a resultant driver signal configured to reduce the vibration of the member while driving the actuator (computer 50 transmits a control signal representative of structural motion of wing 12 to an actuator 52; Actuator 52 rotates control surface 20 proportional to the control signal it receives; the rotation of surfaces 20 and 21 in accordance with the respective control signals from computer 50 is such as to oppose or suppress wing flexure

and consequently rigid body/wing bending flutter which may otherwise occur, i.e., by damping out the oscillations due to wing structural motion and thereby avoiding the destabilizing effects of its combination with rigid body oscillation); and inputting the resultant driver signal to the actuator to move the structure (computer 50 sends a signal to actuator 52), further comprising inputting the vibration signal to a circuit that receives the command signal and drives the actuator see figure 2 which illustrates the general schematic of signal connectivity)

It should be appreciated that the examiner understands that nowhere does Wykes use the words "superimposing" and "inverting". The examiner never the less asserts that Wykes inherently is teaching these method steps. The examiner asserts that where Wykes is "shaping" the response, Wykes is "inverting" the signal. The examiner knows of only one way to actively dampen a vibration signal and that is to control the actuator in the opposite direction. In order to control the actuator in the opposite direction the signal must be inverted (i.e. shaped).

Applicant should further appreciate the breadth of the presently used claim language. Words such as: coupling and connecting are broadly read on via indirect or direct mechanical or electrical connection.

Also, the examiner asserts that the word "superimposing" merely means that multiple signals are "summed" together. Applicant isn't superimposing signals in the sense that

their signals are visually superimposed. Instead, as understood by the examiner, the signals are summed together at a junction. Therefore where Wykes is summing a "shaped signal" with a "control signal" these signals are being "superimposed". (i.e. they are being summed together.)

Applicant is requested to see Figure 2, which illustrates a computer as a black box. Written within this black box is written the words "Summing" and "Shaping".

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 26 and 34-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wykes in view of Allaei (6,394,242).

Wykes discloses a method of damping vibrations of a an aircraft wing including a control system (50), a movable structure (18-21) operatively connected to the wing, and an actuator (52) operatively coupled to the structure to move the structure in response to a command signal from the control system (inherent that actuators are "commanded" to move via a command signal), the method comprising: mounting a vibration canceling circuit to the actuator (see sum junction in Figure 3) generating a signal representative of

vibration of the member (sensors #30, 32, 34, 36 generate signals that represent the vibration of the movable structures), the generating performed using a vibration sensor operatively connected with the member (the vibrations are connected with the wing) ; combining the vibration signal with the command signal to generate a resultant driver signal configured to reduce the vibration of the member while driving the actuator (computer 50 transmits a control signal representative of structural motion of wing 12 to an actuator 52; Actuator 52 rotates control surface 20 proportional to the control signal it receives; the rotation of surfaces 20 and 21 in accordance with the respective control signals from computer 50 is such as to oppose or suppress wing flexure and consequently rigid body/wing bending flutter which may otherwise occur, i.e., by damping out the oscillations due to wing structural motion and thereby avoiding the destabilizing effects of its combination with rigid body oscillation); and inputting the resultant driver signal to the actuator to move the structure (computer 50 sends a signal to actuator 52), further comprising inputting the vibration signal to a circuit that receives the command signal and drives the actuator see figure 2 which illustrates the general schematic of signal connectivity)

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Also, the examiner asserts that the word "superimposing" merely means that multiple signals are "summed" together. Applicant isn't superimposing signals in the sense that their signals are visually superimposed. Instead, as understood by the examiner, the signals are summed together at a junction. Therefore where Wykes is summing a "shaped signal" with a "control signal" these signals are being "superimposed". (i.e. they are being summed together.)

Applicant is requested to see Figure 2, which illustrates a computer as a black box. Written within this black box is written the words "Summing" and "Shaping".

Wykes does not disclose that the sensor is diposed on the actuator. Allaei teaches that it is known in the art to co-locate an actuator and a sensor. (See Col. 14, lines 39-40)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to co-locate a actuator and a sensor (i.e. couple them directly

together) for the purpose of having them act as a single unit (and thus increase the accuracy of signal measurements).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen A. Holzen whose telephone number is 571-272-6903. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 571-272-7045. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Stephen A. Holzen 5/21/07

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